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U. S. DEPARTMENT OF AGRICULTURE

Cooperative ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Plant Pest Control Division
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Volume 9 April 3, 1959 Number 14

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

GREENBUG continues to damage small grains in areas of Oklahoma. Damage apparent in some fields in Hansford County, Texas. (p. 231). PEA APHID heavy and damaging in areas of some western states. ALFALFA WEEVIL larvae damaging in Delaware and severe in Charlotte County, Virginia. A large increase in treated acreage for adult control reported in Nevada. Activity reported elsewhere. (p. 232).

Distribution of SPOTTED ALFALFA APHID. (p. 233). This map replaces the map in CEIR 9(9):130.

SPOTTED ALFALFA APHID medium to heavy in parts of Oklahoma, Texas and New Mexico, with some injury apparent. (p. 234).

BOLL WEEVIL survival survey in Georgia. (p. 237).

A pine SAWFLY survey in Virginia. (p. 237).

Numerous TERMITE flights in New Jersey. Activity reported in Delaware, Maryland, Oklahoma and Virginia. (p. 239).

Some First Reported Records of the Season: PLUM CURCULIO adults appearing from hibernation in Georgia. Eggs of TENT CATERPILLARS numerous on fruit trees in Ogden, Utah. APPLE GRAIN APHID hatching on apple trees in Delaware. APPLE APHID hatching in Delaware, Washington and Indiana. Eggs of PEAR PSYLLA first found March 13 in Washington. PINK BOLLWORM emergence begun in Arizona.

INSECT DETECTION: *Imported fire ant* found for first time in Angelina County, Texas, during February. (p. 239). *Raillietia auris* taken from goats is a new State record for Massachusetts and a new record for the host. (p. 238).

SUMMARY OF INSECT CONDITIONS - 1958 - WISCONSIN (p. 241), PENNSYLVANIA (p. 245).

Some INTRODUCED PESTS reported since 1900. (p. 247).

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Reports in this issue are for the week ending March 27, unless otherwise indicated.

WEATHER OF THE WEEK ENDING MARCH 30

The week was unseasonably mild in the extreme northern Great Plains, rather cold in northern New York and New England and near normal elsewhere. Precipitation generally was moderate to heavy in the Pacific Northwest, the central Great Plains and middle Mississippi Valley, and south of the Great Lakes region. Elsewhere precipitation was light. More moisture is now needed in the Dakotas, southwestern Montana, Arizona, New Mexico, southwestern Oklahoma, parts of Texas and northern Virginia, but wet soil delayed fieldwork in many sections of the South. East of the Rockies, temperatures were unusually mild at the beginning of the week. Maximum temperatures ranged from 75° to 85° in Kansas on the 23rd and 24th, and Minneapolis, Minnesota, and Lansing, Michigan, reported highs of 68° and 71° respectively. The mild, sunny weather was interrupted by stormy weather as an area of low pressure on the 25th to the 27th moved northeastward from the Southwest across New Jersey. During the storm's passage heavy snow fell from the central Great Plains to New England. It was the heaviest snowstorm of the season in southeastern Wyoming, and falls ranged from 10 to 15 inches in northeastern Colorado where near blizzard conditions prevailed on the 25th. Two to 9 inches of snow fell in western and northwestern Kansas, 2 to 6 inches in northwestern Iowa where snow and ice caused heavy damage to utility and communication lines, 4 to 6 inches across central Michigan, 8 to 10 inches in parts of New York, and 2 to 7 inches in New England. In the Great Plains, heavy drifting blocked many roads. Nearly all this snowfall soon melted, and at the end of the week the ground generally was bare except in upper New England and the upper Great Lakes region. At Houghton, Michigan, where snow was 37 inches deep last week, only 8 inches were left on March 31.

The storm was followed by a cold snap which reduced temperatures to freezing in the southwestern Great Plains and to the northern portions of Mississippi, Alabama and Georgia. In extreme northern areas, Grand Marais, Michigan, recorded -6° on the 28th and Cooperstown, New York, -3° on the 29th. Ice jams caused more local flooding in the upper Mississippi Valley. In Maine, the opening of the fishing season will be the latest on record due to the persistence of thick ice on lakes. In the Pacific Northwest most precipitation fell during a frontal passage on the 27th and 28th. Several inches of new snow fell in the central Sierra Nevada and Cascade Mountains. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - TEXAS - Survey conducted March 22 in panhandle area revealed eggs developing rapidly in most sections. Light hatch expected within 7 days. (Russell). Nymphs observed on roadsides in Briscoe, Floyd, Crosby, Dickens, King, Stonewall and Jones Counties, March 18-19. (Boyd, Hawkins). NEVADA - Early types of range vegetation have developed rapidly in the southern area. It is anticipated that an early hatch of Trimerotropis spp. and other early appearing species may occur in the area. (PPC, West. Reg., Feb. Rpt.).

MORMON CRICKET (Anabrus simplex) - NEVADA - First-instar nymphs found in small numbers during the last week of February in the Rabbit Hole area of Pershing County. (PPC, West. Reg.).

EUROPEAN CORN BORER (Pyrausta nubilalis) - KANSAS - Survey in Jefferson County indicates 34 percent survival of overwintering borers, which is higher than in 1958. (Peters). SOUTH DAKOTA - Preliminary survey of 3 east central counties March 16-21, indicates approximately 24 percent average winter mortality in the overwintering borer population. (Mast).

A BILLBUG (Calendra callosa) - GEORGIA - Feeding on volunteer corn in Colquitt County. (Johnson).

CORN FLEA BEETLES (Chaetocnema spp.) - ARIZONA - C. ectypa continued heavy on corn and required controls in some Maricopa County fields. Averaged 10-12 per plant in corn 4-6 inches high. (Ariz. Coop. Sur.). ILLINOIS - No C. pulicaria found during sod surveys conducted March 16-20, even though temperatures exceeded 60°. (White).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - ARKANSAS - Winter survival ranged 2.5-60 percent in Washington and Benton Counties, with an average of 19 percent. (Ark. Ins. Sur.).

DIAMONDBACK MOTH (Plutella maculipennis) - CALIFORNIA - Medium in wheat fields infested with weeds and mustard in Cuyama, Santa Barbara County. (Cal. Coop. Rpt.).

GREENBUG (Toxoptera graminum) - OKLAHOMA - Small grain fields in Payne, Noble, Kay, Garfield, Blaine, Kingfisher and Logan Counties surveyed for damage. In the Stillwater-Tankawa-Billings area, most damage occurred in barley fields. A few wheat fields in area had some damage. Wheat fields with damage spots were abundant in Kingfisher County on highways 77 and 33. The amount of future damage will depend on weather conditions and growth of wheat. Damage will be greatly reduced with good growing conditions. Natural enemies not very abundant. (Henderson, Thompson). Averaged 135 per linear foot in Noble County and 27 in Garfield County, March 23-24. (Henderson, Wood). Heavy damage to barley and rye in Noble and Payne Counties, some damage in some wheat fields. Heavy numbers of winged forms noted. Parasite and predator numbers low. No damage observed in Pawnee County fields. (VanCleave, Drew). Some damage in small grain fields in Payne, Noble and Kay Counties. (Bieberdorf). No infestations found in Craig County small grain fields. (Campbell). Counts ranged 10-500 per linear foot in southeastern Payne County and 5-25 in Tulsa County (Stiles). Populations ranged 3-5 per linear foot in northern Kiowa County. (Hudson). TEXAS - Infestations very spotted in Hansford County and ranged from none in some fields to 600 per linear foot in other fields, with damage apparent. (Daniels).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OKLAHOMA - Populations common and ranged 10-100 per linear foot in most small grain fields in Payne, Pawnee and Noble Counties. (VanCleave, Drew).

CORN LEAF APHID (Rhopalosiphum maidis) - ARIZONA - Continued heavy in some Maricopa County barley fields. Honeydew deposits may affect fertilization of some heads. Increased in barley fields in Pinal County. (Ariz. Coop. Sur.).

ENGLISH GRAIN APHID (Macrosiphum granarium) - DELAWARE - Alates and nymphs present on winter ryegrass in Sussex and Kent Counties. (Burbutis, Conrad). OKLAHOMA - Populations common in most small grain fields in Payne, Pawnee and Noble Counties, with 5-25 per linear foot. (VanCleave, Drew). NEW MEXICO - Light to moderate in barley in Chaves and Eddy Counties, with minor damage. (N. M. Coop. Rpt.).

A MITE- NEVADA - Damaged winter wheat in Lovelock area of Pershing County. Die-out of stands due to drought and mite damage. (Schultz).

CUTWORMS - DELAWARE - Mature larvae of Amathes c-nigrum, Feltia ducens and Lacinipolia renigera common in alfalfa and clover fields in Kent and Sussex Counties. No noticeable injury. (Burbutis, Conrad). IDAHO - Half-grown larvae, possibly Chorizagrotis auxiliaris, averaged 1-4 per square foot in alfalfa fields near Parma. (Waters). WYOMING - Survey indicated that C. auxiliaris larvae averaged less than one per linear foot of row in alfalfa, winter wheat and winter barley in Laramie, Goshen and Platte Counties. (Davison).

CLOVERWORM (Plathypena scabra) - ALABAMA - Light to moderate on clover and vetch in Wilcox County. (Grimes).

ALFALFA WEEVIL (Hypera postica) - DELAWARE - First-instar larvae common on clover in Kent County and prevalent on alfalfa in Sussex County with injury very noticeable. (Burbutis, Conrad). MARYLAND - Activity begun on Eastern Shore, with small numbers of newly-hatched larvae noted on 2 to 3-inch alfalfa in Worcester and Talbot Counties. Few adults taken by sweeping. (U. Md., Ent. Dept.). VIRGINIA - Severe, 1-5 larvae per stem, in Charlotte County. (Barbour). SOUTH CAROLINA - Averaged 1.5 per terminal in untreated fields in Greenville County, March 19. (Nettles et al.). NEVADA - A large increase in treated acreage for adult control in 1959. Weather conditions were good March 1-20. (Coop. Rpt.). UTAH - Active in Weber County and controls being applied. (Knowlton).

CLOVER LEAF WEEVIL (Hypera punctata) - DELAWARE - Late-instar larvae common on clover and alfalfa in Sussex County and on clover in Kent County. (Burbutis, Conrad). MARYLAND - Light larval damage to red clover foliage at Easton, Talbot County. (U. Md., Ent. Dept.). VIRGINIA - Light to medium on red and ladino clovers in southern Culpeper County. (Heltzel, March 13). IDAHO - Early-instar larvae averaged 1-4 per alfalfa crown examined in southwestern part of State. (Waters).

LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) - ALABAMA - Limited numbers on crimson clover in Wilcox County. (Grimes).

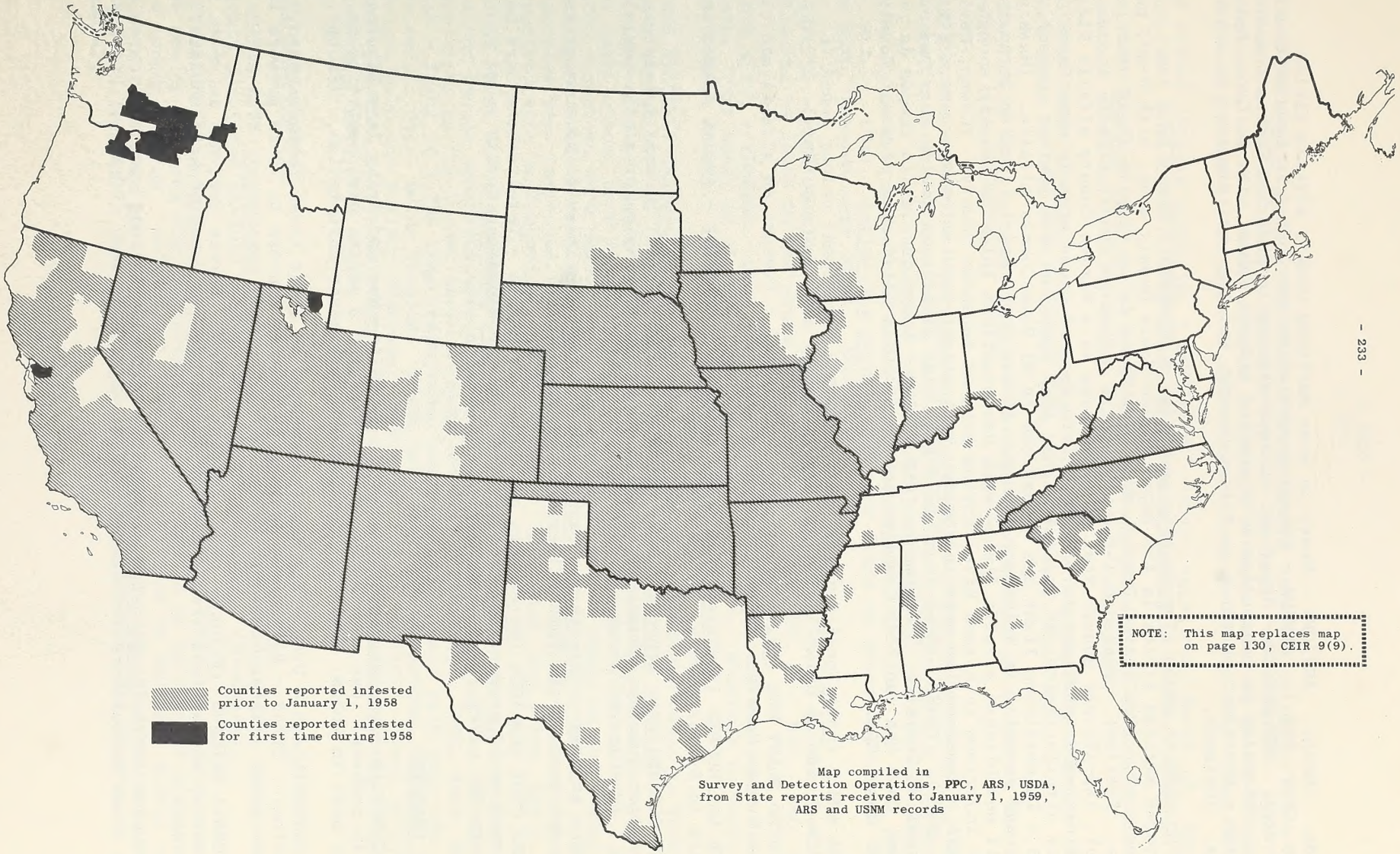
A CLOVER WEEVIL (Hypera meles) - ALABAMA - Moderate infestations on crimson clover in Talladega County are increasing. (Hays).

A SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata tenella) - NEW MEXICO - Averaged 1-2 per square foot in alfalfa fields in Dona Ana, Luna and Grant Counties. (N. M. Coop. Rpt.).

PEA APHID (Macrosiphum pisi) - MARYLAND - Averaged less than 5 per sweep on 2 to 3-inch alfalfa, Worcester and Talbot Counties. (U. Md., Ent. Dept.). OKLAHOMA - Common in alfalfa fields in Payne, Pawnee and Noble Counties. Counts ranged 5-50 per square foot in most fields with 300 per square foot in one Payne County field. (VanCleave, Drew). Ranged 0.5-10 per sweep in 3 Choctaw County alfalfa

(Continued on page 234)

DISTRIBUTION OF SPOTTED ALFALFA APHID *(THERIOAPHIS MACULATA)*



NOTE: This map replaces map on page 130, CEIR 9(9).

fields. (Goin). ARIZONA - Heavy in some Maricopa County alfalfa fields. (Ariz. Coop. Sur.). NEVADA - Damaging population developing in Douglas County. (Roberts). NEW MEXICO - Heavy and damaged alfalfa in Eddy and Chaves Counties. Being controlled in connection with spotted alfalfa aphid. (N. M. Coop. Rpt.). ALABAMA - Prevalent on vetch in Wilcox County, but has not migrated to other crops. (Grimes).

SPOTTED ALFALFA APHID (Therioaphis maculata) - OKLAHOMA - Heavy in a few scattered alfalfa fields in the Payne-Pawnee-Noble County area, with 0-300 per square foot. (VanCleave, Drew). None were found in an alfalfa field near Jenks. (Stiles). Ranged 0.1-2 per sweep in 3 Choctaw County alfalfa fields (Goin), 150-175 per square foot of crown area in a Harmon County alfalfa field (Hatfield) and increased to 579 per square foot of crown area in some Payne County alfalfa fields, 26 percent higher than previous week (Ketner, James). TEXAS - Infestations light and widespread in El Paso County alfalfa. (Hawkins). Heavy and damaging in Wilbarger County. (Texas Coop. Rpt.). Medium to heavy in all established alfalfa fields with new plantings infested heavily enough to be injurious in Brazos River bottom area of McLennan County. (Cowan, Davis). ARIZONA - Remained low over the State, with slight population decrease. (Ariz. Coop. Sur.). IDAHO - None found in 5-inch high alfalfa in fields surveyed south and east of Lewiston. (Portman). NEW MEXICO - Heavy in alfalfa fields in Chaves, Dona Ana and Eddy Counties and in the Gila-Cliff area of Grant County. (N. M. Coop. Rpt.).

COWPEA APHID (Aphis medicaginis) - NEW MEXICO - Occasional colony found in alfalfa fields in Gila-Cliff area, Grant County. (N. M. Coop. Rpt.)

TRANISHED PLANT BUG (Lygus lineolarus) - DELAWARE - Present on alfalfa and clover in Sussex County. (Burbutis, Conrad).

CLOVER LEAFHOPPER (Aceratagallia sanguinolenta) - DELAWARE - Adults common on alfalfa in Sussex County. (Burbutis, Conrad).

CHINCH BUG (Blissus leucopterus) - OKLAHOMA - Adults still present in winter hibernation quarters (bunch grasses) in Payne County. No major winter mortality noted. (VanCleave, Drew).

THRIPS - ARIZONA - Chirothrips falsus and C. mexicanus heavy on Bermuda grass grown for seed in the Yuma Valley. (Ariz. Coop. Sur.).

SOYBEAN CYST NEMATODE (Heterodera glycines) - VIRGINIA - Infestations have been confirmed on 12 properties, totaling 553 acres in Nansemond County as of February 28. (PPC, East. Reg.).

FRUIT INSECTS

PLUM CURCULIO (Conotrachelus nenuphar) - GEORGIA - Now appearing from hibernation in numbers. One commercial orchard averaged 5 adults per peach tree on border next to woods. This is considered a very heavy infestation. (Snapp).

TENT CATERPILLARS - UTAH - Egg masses numerous on fruit trees in Ogden area. (Knowlton). TEXAS - Malacosoma americanum causing concern to fruit growers in eastern area. (Texas Coop. Rpt.)

CALIFORNIA PRIONUS (Prionus californicus) - UTAH - Larvae numerous in roots of some cherry and apricot trees recently pulled up from Weber County orchards. (Knowlton).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - DELAWARE - Young nymphs hatching on apple trees in northern New Castle County. Eggs prevalent. (Kelsey).

APPLE APHID (Aphis pomi) - DELAWARE - Young nymphs hatching on apple trees in northern New Castle County. Eggs prevalent . (Kelsey). WASHINGTON - Eggs beginning to hatch on pear. (Burts). INDIANA - Began hatching March 27 and were readily found in bud tips in all orchards examined March 30. (Hamilton).

PEAR PSYLLA (Psylla pyricola) - WASHINGTON - First eggs found March 13. Becoming plentiful. Adult populations light to moderate in most orchards. (Burts).

A MELYRID (Listrus pardalis) - CALIFORNIA - Heavy infestation of adults occurred on avocado trees in Vallejo, Solano County. (Cal. Coop. Rpt.).

PERSIMMON BORER (Sannina uroceriformis) - FLORIDA - Causing severe damage to persimmon trees in Orange City area. (Fla. St. Plt. Brd., Feb. Rpt.).

CITRUS THRIPS (Scirtothrips citri) - ARIZONA - Increasing on citrus in Maricopa County. (Ariz. Coop. Sur.).

SCALE INSECTS - FLORIDA - Ceroplastes floridensis and Lepidosaphes beckii on the increase in mature citrus groves in Orange County. Protopulvinaria pyriformis heavy on loquat trees in Daytona beach. Has been heavy on avocado and mango in the St. Lucie-Martin district and Central Dade district. (Fla. St. Plt. Brd., Feb. Rpt.). UTAH - Aspidiotus perniciosus very heavy on pears and prunes in some home orchards near Ogden. (Knowlton).

WHITEFLIES - FLORIDA - Heavy in citrus groves in the St. Lucie-Martin district. Increasing on limes in the south Dade district. (Fla. St. Plt. Brd., Feb. Rpt.).

SPIDER MITES - FLORIDA - Some increase on citrus in Ocala and Macclenny districts. Very heavy on limes in the south Dade district. Moderate to heavy in Hillsborough County. (Fla. St. Plt. Brd., Feb. Rpt.).

CITRUS BLACKFLY (Aleurocanthus woglumi) - TEXAS - Inspections began in Webb County on February 3. During February, 6,262 trees on 1,191 city properties were inspected at Laredo with negative results. Inspections began in area where four infestations were found in late 1955 and early 1956. (PPC, So. Reg.). MEXICO - Surveys were conducted in the chemical control zones in the states of Tamaulipas, Nuevo Leon and Sonora. A total of 77,372 citrus trees on 1,516 properties were inspected, 47 trees being infested on 7 properties. Infested properties were in Tamaulipas and Nuevo Leon. (PPC, Mex. Reg., Feb. Rpt.).

MEXICAN FRUIT FLY (Anastrepha ludens) - ARIZONA - Trapping during February in Yuma and Tucson districts were negative. CALIFORNIA - Trapping and larval inspections in the border area were negative during February. (PPC, West. Reg.). TEXAS - Total of 2,296 trap inspections made during February with only one specimen, a male, being trapped. Traps were operated in Cameron, Dimmit, Hidalgo, Webb and Willacy Counties. (PPC, So. Reg.). MEXICO - Total of 2,058 traps operated in Baja California and Sonora. All inspections during February negative. (PPC, Mex. Reg.).

TRUCK CROP INSECTS

AN ACARID MITE (Tyrophagus dimidiatus)-CALIFORNIA - Causing slight damage to spinach plantings in Yolo County, with 2-12 per plant. (Stombler).

GREEN PEACH APHID (Myzus persicae) - CALIFORNIA - Early spinach plantings in Yolo County suffered heavy infestations. Now reduced to very light populations by a fungus disease. (Stombler). ARIZONA - Continues to increase slowly on lettuce. Increase reported on potatoes in Maricopa County. (Ariz. Coop. Sur.). WASHINGTON - Probably this species, attacking head lettuce near Wapato. (Landis).

POTATO APHID (Macrosiphum solanifolii) - NEW MEXICO - An occasional colony, probably this species, found on lettuce near Las Cruces, Dona Ana County. (N. M. Coop. Rpt.).

A SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata tenella) - NEW MEXICO - Caused minor damage to many lettuce fields in Dona Ana County. (N. M. Coop. Rpt.).

CUTWORMS - NEW MEXICO - Destroying lettuce along ditch banks in a few fields near Las Cruces, Dona Ana County. (N. M. Coop. Rpt.).

THRIPS - NEW MEXICO - Haplothrips clarisetis continues to damage lettuce plants in Dona Ana County. Frankliniella spp. averaged 2-3 on onion plants in Luna County. Appear to be building up in onion fields in Dona Ana County. Average 5-6 per plant in most heavily infested fields. (N. M. Coop. Rpt.).

SOUTHERN CABBAGEWORM (Pieris protodice) - TEXAS - Feeding heavily on turnips with lighter infestations on potatoes in Dimmit County. (Harding).

FLEA BEETLES - NEW MEXICO - Heavy infestations destroyed radish plantings near Animas, Hidalgo County. Also caused considerable damage to cabbage near Deming, Luna County. (N. M. Coop. Rpt.).

CABBAGE APHID (Brevicoryne brassicae) - ARIZONA - Increasing on cabbage in Maricopa County. Some control required. (Ariz. Coop. Sur.). GEORGIA - Moderate to heavy on cabbage in Colquitt, Thomas, Brooks and Lowndes Counties. (Johnson).

DIAMONDBACK MOTH (Plutella maculipennis) - GEORGIA - Light to moderate on cabbage in Colquitt, Thomas, Brooks and Lowndes Counties. (Johnson).

LEAFHOPPERS - ARIZONA - Erythroneura elegantula and E. variabilis increasing on grapes in Maricopa County. (Ariz. Coop. Sur.).

RED-NECKED CANE BORER (Agrilus ruficollis) - VIRGINIA - In red raspberries in 3 locations in the Blacksburg area. (Amos). NORTH CAROLINA - Particularly severe in Latham variety raspberries locally in Wake County. (Gast, Farrier).

STRAWBERRY WEEVIL (Anthonomus signatus) - ALABAMA - Although no weevils were found, typical damage was observed to a limited extent on wild blackberries in Wilcox County. (Grimes).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - NEW JERSEY - Laying eggs on old strawberry leaves. (Ins. Dis. Newsl.). ARIZONA - Increasing on strawberries in the Litchfield Park area of Maricopa County. (Ariz. Coop. Sur.). WASHINGTON - On round-leaf mallow at Union Gap. (Landis).

IRIS WHITEFLY (Aleyrodes spiraeoides) - WASHINGTON - On round-leaf mallow at Union Gap. Earliest time eggs of this species seen out-of-doors. (Landis).

TOBACCO INSECTS

GREEN PEACH APHID (Myzus persicae) - GEORGIA - Light on tobacco plant beds in 4 counties. (Johnson).

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - GEORGIA - Light to moderate on tobacco plant beds in 10 counties. (Johnson).

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - GEORGIA - Light to moderate on tobacco plant beds in ten counties. (Johnson).

COTTON INSECTS

Boll Weevil Survival Survey in Georgia - Spring 1959

Collections of woods trash were made March 9-20. The same areas were surveyed in 1958 and 1959.

Area	Average No. Weevils Per Acre		Percent Survival	
	1959	1958	1959	1958
Northwest				
Gordon Co.	0	97	0	9
North Central				
Spalding Co.				
Butts Co.				
Pike Co.	726	1,307	33	26
Coweta Co.				
Meriwether Co.				
East Central				
Burke Co.	48	968	12	54
South				
Tift Co.	145	532	100	100
State Average	329	731	29	34

The average percent survival for the State is lower in 1959 than in 1958. Only once before during the eight-year period that records have been made, has the number of weevils and the percentage survival been lower. (Beckham, Morgan).

PINK BOLLWORM (Pectinophora gossypiella) - ARIZONA - Tests near Tempe show that moth emergence has begun, with the first emergence on March 19. (Ariz. Coop. Sur.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

A PINE SAWFLY (Neodiprion sp.) - VIRGINIA - During 1958, there was considerable spread in and around areas first noted in 1957. An egg survey was completed in February and March, 1959. Total of 322 stands in a 9-county area were sampled. Medium to heavy defoliation of pines was noted throughout the surveyed area being particularly heavy east of Louisa in Louisa County, along James River in southeastern Fluvanna, northern Cumberland, Powhatan and Goochland Counties. Supplemental road surveys indicate that the sawfly has extended its range somewhat to the east, where heavy defoliation may be expected in all areas where it was noted in 1958. No extension of range has been noted to the west. Sawfly feeding will be more extensive on loblolly pine in 1959 than in 1958. Marked preference for shortleaf and Virginia pine is noted, but will attack loblolly pine and seems to prefer trees in sapling stage and smaller. The expected hatching date is between April 1 and April 15, depending on weather conditions. (Rowell, Va. Div. For., et al.).

A TUSSOCK MOTH (Halisidota ingens) - NEW MEXICO - Light on about 50,000 acres of ponderosa and pinyon pine, Douglas-fir and white fir near Ruidosa, in the Lincoln National Forest. (N. M. Coop. Rpt.).

A PINE APHID (Essigella californica) - CALIFORNIA - Heavy on Monterey pine in Hansford, King County. (Cal. Coop. Rpt.).

BOXWOOD LEAF MINER (Monarthropalpus buxi) - MARYLAND - Infesting boxwood at Myersville, Frederick County. (U. Md., Ent. Dept.).

NATIVE HOLLY LEAF MINER (Phytomyza ilicicola) - MARYLAND - Infesting holly at Takoma Park, Montgomery County. (U. Md., Ent. Dept.).

APHIDS - MARYLAND - Macrosiphum rosae building up on new rose foliage at Greenbelt, Prince Georges County. (U. Md., Ent. Dept.). NEW MEXICO - Cinara tujafilina populations becoming numerous on arborvitae throughout the southern part of the State. M. rosae building up on roses in same area. (N. M. Coop. Rpt.).

A PSYLLID (Calophya californica) - CALIFORNIA - Heavy and severely damaged Rhus ovata in Sacramento, Sacramento County. (Cal. Coop. Rpt.).

SCALE INSECTS - DELAWARE - Diaspis carueli abundant on junipers in New Castle County. (Burbutis, Conrad). MARYLAND - Phenacaspis pinifoliae noted on spruce needles at Baltimore. (U. Md., Ent. Dept.). PENNSYLVANIA - P. pinifoliae very heavy on Scotch pine along turnpike in Bedford County. (Udine). OKLAHOMA - Unaspis euonymi very heavy on twigs and leaves of Euonymus sp. in a yard at Tulsa. (Apt). NORTH CAROLINA - Pseudaulacaspis pentagona severe on privet in Wake County. (Jones, Farrier). CALIFORNIA - Chrysomphalus rossi heavy on Araucaria bidwilli in Los Altos, San Mateo County. (Cal. Coop. Rpt.). IDAHO - Few reports received concerning Lepidosaphes ulmi infestations on blue ash trees and lilac bushes in Twin Falls. (Peay). UTAH - L. ulmi severe on many willows and poplars at Morgan, Morgan County. (Knowlton).

INSECTS AFFECTING MAN AND ANIMALS

A MITE (Raillietia auris) - MASSACHUSETTS - Specimens collected deep in the ears of goats at Amherst, in December, 1958, are a new record for the State and a new record for the host. Det. R. W. Strandtman. (Wheeler).

STORED-PRODUCT INSECTS

KHAPRA BEETLE (Trogoderma granarium) - Inspections were made during February in PENNSYLVANIA, NEW JERSEY, RHODE ISLAND, MASSACHUSETTS, CONNECTICUT, and NEW YORK. No positive determinations have been received on specimens submitted. (PPC, East. Reg.). Inspections in ALABAMA, GEORGIA, MISSISSIPPI, NORTH CAROLINA, and TENNESSEE during February were negative. (PPC, So. Reg.). Some inspection work conducted in MISSOURI and MINNESOTA during February. (PPC, Cent. Reg.). MEXICO - Seventy-six properties were inspected in the states of Baja California, Sonora, Jalisco, Durango, Coahuila, Nuevo Leon and Chihuahua with a total of 259 specimens submitted for identification. No positive determinations were received during February. (PPC, Mex. Reg., Feb. Rpt.).

CONFUSED FLOUR BEETLE (Tribolium confusum) - OKLAHOMA - Heavy in 2 and light in one of 13 bins examined in Payne-Pawnee-Noble County area. Populations per quart of infested grain averaged 8 in barley in steel bins, one in milo and 10 in oats. (VanCleave, Drew).

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) - OKLAHOMA - Heavy in 3 of 13 bins examined in Payne-Pawnee-Noble County area. Populations in infested bins averaged 100 per quart in barley, 75 in oats and 50 in rye. (VanCleave, Drew).

FLAT GRAIN BEETLE (Laemophloeus pusillus) - OKLAHOMA - Heavy in 3 and light in 2 of 13 bins examined in Payne-Pawnee-Noble County area. Populations per quart of infested grain averaged 3 and 50 in barley in wooden and steel bins, respectively; 15 in oats; and 0.5 and 30 in rye. (VanCleave, Drew). TEXAS - Medium to heavy in stored milo in Dickens, Garza and Lynn Counties. (Texas Coop. Rpt.).

LESSER GRAIN BORER (Rhyzopertha dominica) - TEXAS - Infestations in milo medium to heavy in Dickens, Garza and Lynn Counties. (Texas Coop. Rpt.).

CADELLE (Tenebroides mauritanicus) - OKLAHOMA - Averaged 0.4 per quart in one bin of rye out of 13 bins of small grains examined in Payne-Pawnee-Noble County area. (VanCleave, Drew).

GRAIN MITES - TEXAS - Heavy in stored oats in Gillespie County and in milo in Lynn County. (Texas Coop. Rpt.).

BENEFICIAL INSECTS

PARASITES - OKLAHOMA - Hymenopterous species heavy in 2 of 3 small grain fields checked in Payne County, with 60-85 percent of aphids parasitized. None found in a Tulsa County field. (Stiles). Generally light in small grain fields checked in Payne, Pawnee and Noble Counties, with less than 5 percent of aphids parasitized. (VanCleave).

PREDATORS - OKLAHOMA - Hippodamia convergens generally light in most alfalfa and small grain fields checked in Payne, Pawnee and Noble Counties. Larvae averaged up to 10 per linear foot in spots in one Noble County barley field, but probably not heavy enough to control aphid population present. (VanCleave). Averaged 2 per square foot of crown area in a Harmon County alfalfa field (Hatfield) and 0-0.3 per sweep in 3 Choctaw County alfalfa fields (Goin). Nabis sp. ranged 0-0.2 and Chrysopus sp. 0-0.1 per sweep in 3 Choctaw County alfalfa fields. (Goin). ARIZONA - Coccinellids, primarily Hippodamia convergens, increased in barley and alfalfa in the Salt River Valley. Averaged 10 adults and 3 larvae per 50 sweeps. (Ariz. Coop. Sur.).

MISCELLANEOUS INSECTS

ANTS - DELAWARE - Swarming adults of Lasius claviger noted in New Castle County. (Burbutis, Conrad). NEW JERSEY - Flights have been observed and reported. (Ins. Dis. Newsl.). PENNSYLVANIA - Camponotus sp. of considerable trouble in trailer home and in a house. Both in Centre County. (Adams, Gesell).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - TEXAS - Reported for first time in Angelina County in February. Treatments of infested lands totaled 40,812 acres during February. (PPC, So. Reg.).

TERMITES - NEW JERSEY - Numerous flights reported. (Ins. Dis. Newsl.). DELAWARE - Numerous inquiries from New Castle County. (Bray). MARYLAND - Workers, soldiers and winged forms noted in a building at Rockville, Montgomery County. (U. Md., Ent. Dept.). VIRGINIA - Swarming in an apartment house in Clifton Forge, Alleghany County, and a house in Forest, Bedford County (Rowell), and from houses in Crozet, Albermarle County, and in Harrisonburg, Rockingham County (Amos). OKLAHOMA - Have been observed swarming in Tulsa area since early March. (Price). Reticulitermes hageni damaged a home, under a dirt-filled porch, at Tulsa and R. tibialis caused extensive damage to a home at Ponca City. (Bieberdorf).

AN EARTHWORM MITE (Fuscuropoda agitans) - NORTH CAROLINA - Heavy in earthworm culture in Rowan County. (Wilkins, Farrier).

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Agrot. yps.	Prod. ornith.	Perid. marg.	Feltia subt.
ARIZONA					
Mesa 3/18-24			11	14	
ARKANSAS					
Fayetteville 3/15-18	1	1		1	
Kelso 3/5-18		1		2	
Morrilton 3/5-18	2	10			
FLORIDA					
Gainesville 3/24					3
MISSISSIPPI					
*Stoneville 3/21-27	199	43		157	
SOUTH CAROLINA					
Charleston 3/16-29	26	11	3	2	6
Clemson 3/21-28			9	2	3

* Four traps - Stoneville.

SUMMARY OF INSECT CONDITIONS - 1958

WISCONSIN

Prepared by Wis. Ins. Survey

Weather and Insect Activity: As late as May 22 frosts occurred as far south as Janesville, but heat growth units were above normal until mid-May. The weather pattern was cool and dry throughout southern sections until late summer but northern sections had more rainfall. A mild fall followed. Drought reduced crop quality and yield more in 1958 than insects. Outdoor insect activity was noticeable for brief periods as early as the third week of February, and black-light traps indicated that nocturnal insect activity was sporadic as late as mid-June. In many instances, insect activity remained low until early July, when large volumes of armyworm moths were caught in blacklight traps. Insects were active until mid-November.

Cereal, Forage, Potato and Pea Insects: MEADOW SPITTLEBUG (Philaenus leucophthalmus) eggs hatched by May 16 in southern areas. Populations averaged 0.8 per alfalfa stem in Iowa, Grant and Lafayette Counties and represented a large increase for these counties. Populations remained high in eastern counties throughout the summer and adults were numerous in most alfalfa-growing areas of the State. EUROPEAN CORN BORER (Pyrausta nubilalis) winter survival appeared normal. Parasitism of borers collected in the fall of 1957 was determined to be 19.7 percent, Lydella grisescens being the principal parasite. Perezia pyrausta, a protozoan parasite, infected 2.3 percent of the borers. Pupation was complete in southern sections by June 20, but moths were caught as early as May 30 in Platteville and River Falls light traps. Egg masses and first-instar larvae were observed on field corn in Grant and Crawford Counties June 21. Heavy local infestations in sweet corn were noted in Green Lake County. The 1958 fall survey revealed an average of 15 borers per 100 plants, the lowest since the surveys were begun. The major CORN EARWORM (Heliothis zea) moth flight occurred during the week of August 22, and catches continued until mid-November. Prior to August 22, light catches were obtained from various trap locations. Damage to sweet corn was light, but high infestations in late field corn were observed. Widespread CUTWORM damage occurred by May 29. Injury to alfalfa, oats, corn, soybeans and truck crops was observed. Corn fields were replanted because damage was more extensive than in several years. Other soil insects, WIREWORMS, SEED-CORN MAGGOT (Hylemya cilicrura), NORTHERN CORN ROOTWORM (Diabrotica longicornis) and CORN ROOT APHID (Anuraphis maidi-radicis) were destructive in several areas. Considerable rootworm damage occurred in a Pierce County corn field, being the first observed in the northwest area. POTATO LEAFHOPPER (Empoasca fabae) was observed on May 21 in alfalfa in southern counties. Populations increased slowly and remained considerably lower than in 1957. Damaged potato vines in untreated garden plantings were common in some areas. A few alfalfa fields in Dane and Outagamie Counties showed "yellowing". PEA APHID (Macrosiphum pisi) counts were low in alfalfa fields in mid-May. The first aphids in pea fields were noticed May 21 in Dane and Lafayette Counties. Large populations on peas in Outagamie County were reported June 6 and treatment begun. Before pea harvest was complete considerable acreage was treated, especially in the northeastern growing area, and in some instances two treatments were necessary. Populations were higher than in 1957, but can be rated as moderate. Parasites were observed. High fall populations in alfalfa were noted, but were not as high as in the fall of 1956.

During the week of April 27, the first ARMYWORM (Pseudaletia unipuncta) moths were caught in Middleton and Platteville blacklight traps. Large numbers were collected in all traps during early July but larvae were not troublesome. Small larvae were observed in several late pea fields in Columbia County, but were not a problem. Fifty percent parasitism was evident in the early-hatched larvae,

principally by Apanteles militaris, Winthemia quadripustulata and two unidentified species. Moth flight did not continue in the fall as in 1957. Overwintering TARNISHED PLANT BUG (Lygus lineolaris) adults were found in most southern alfalfa fields by May 16. MEADOW PLANT BUG (Leptopterna dolabratus) nymphs were also observed. Adults of ALFALFA PLANT BUG (Adelphocoris lineolaris) and RAPID PLANT BUG (Adelphocoris rapidus) occurred in Richland County alfalfa and red clover fields by June 10. Alfalfa and tarnished plant bug populations were high in fall, with large aggregations on goldenrod prior to dispersal to overwintering habitats. Occasional first and second-instar GRASSHOPPER nymphs were found by May 23, including Melanoplus bivittatus, M. bilituratus, M. viridipes and M. borealis. Economic numbers of M. femur-rubrum began to hatch in lighter soils of the central area during the week of July 18, with up to 50 nymphs per square yard in Waushara, Waupaca, Marquette and Adams Counties. The fall survey showed the greatest concentration of adults and eggs existed in the central counties. APHID populations at the University Hill Farms were considerably higher during early summer than in the same period of 1957. However, summer and late-summer populations did not reach the 1957 level. APPLE GRAIN APHID (Rhopalosiphum fitchii) was noticed on grains the first of April, but had not completed development on the winter host locally, indicating a migration from the south. ENGLISH GRAIN APHID (Macrosiphum granarium) was observed on winter grain April 14. Heavy spring migrations to small grains occurred the week of May 29. High populations occurred in many oat fields throughout the State. CORN LEAF APHID (Rhopalosiphum maidis) was noted by May 23 on barley, where large colonies built up, and were found on corn July 25. By mid-August, most southern corn fields were 100 percent infested, but colony size was smaller than in 1957. Other species that attained high populations at the University Hill Farms were BEAN APHID (Aphis fabae), APPLE APHID (Aphis pomi), ROSE APHID (Macrosiphum rosae), GREEN PEACH APHID (Myzus persicae) and other species. The incidence of yellow dwarf virus disease of small grain at the University Hill Farms was associated with the higher populations of the vector aphid species. Recovery of POTATO ROT NEMATODE (Ditylenchus destructor) was made from 15 fields on 10 farms that were not reported as being infested in 1957.

Orchard Insects: The first CODLING MOTH (Carpocapsa pomonella) adults were trapped May 14 at Gays Mills and the peak catch occurred June 4. In Door County, the first moths were caught June 20. Light trap catches indicated that second-brood emergence began July 19 at Gays Mills and continued to early September. On July 26 in Door County, adult and larval populations were present. Occasional second-generation moths were caught the week of August 28. Codling moth continues to be one of the serious pests of apples in Door and Crawford Counties. APPLE MAGGOT (Rhagoletis pomonella) adults were trapped at Madison May 28, and catches continued until mid-August. Adults were observed July 18 in Door County. Infestations were heavy in unsprayed apples in Dane County and other portions of the State. PLUM CURCULIO (Conotrachelus nenuphar) egg laying was observed the week of June 13 in Door County. Adults, eggs and first and second-instar larvae were observed the week of June 28. This species was one of the more important problems on cherries. By mid-May APPLE GRAIN APHID (Rhopalosiphum fitchii) was numerous on apple fruit stems in the Gays Mills area. APPLE APHID (Aphis pomi) was a serious pest in Door County apple orchards. EUROPEAN RED MITE (Panonychus ulmi) eggs began hatching in Door County about May 9. RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) adults emerged and began egg laying in late April in Door County. Larval development had advanced to the second instar by June 13, adult emergence began July 13 and all stages were present July 26. This species is an important problem of Door County apple orchards. In Door County, FRUIT TREE LEAF ROLLER (Archips argyrospila) was in first and second instars by May 24. Pupation was noted the week of June 28 and emergence began by July 4. Adults were observed July 26 and were present until August 11. EYE-SPOTTED BUD MOTH (Spilonota ocellana) larvae were in third and fourth instars by May 24 in Door County. Pupation started by June 28 and adults were present by July 26. The overwintering population was on cherry and apple leaves by August 28. This was

one of the important cherry pests in Door County. CHERRY FRUITWORM (Grapholitha packardi) adults and eggs were present by June 21. Second and third-instar larvae were observed the week of July 26.

Truck Crop and Small Fruit Insects: The northward migration of SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) was observed from southern overwintering areas to states west of Wisconsin. Overwintering nymphs began hatching by May 13. Populations were low in southeastern areas but high in the Rhinelander area. The incidence of "aster yellows" was considerably lower than in 1957. FLEA BEETLE populations were high on tomato and cabbage transplants, radishes and potatoes early in the growing season. After high spring populations in the Racine-Kenosha area, POTATO FLEA BEETLE (Epitrix cucumeris) numbers declined then increased slowly, with high populations being reached in September. Populations were lower at Rhinelander. STRIPED FLEA BEETLE (Phyllotreta striolata) populations appeared higher than normal. CABBAGE LOOPER (Trichoplusia ni)and IMPORTED CABBAGEWORM (Pieris rapae) adults were observed by May 16. By mid-August, in the Racine-Kenosha area, there were as many as 20 lepidopterus larvae per cabbage head, with 8 imported cabbageworms to each looper. In early September the ratio was almost reversed being five to one. Diseased loopers were observed in this area. CABBAGE APHID (Brevicoryne brassicae) populations were light in the Racine-Kenosha area and parasitism was observed. Control measures were necessary in Eau Claire County. ONION MAGGOT (Hylemya antiqua) populations were high in southeastern sections and damage was heavy on untreated fields and on fields treated with chlorinated hydrocarbons. The first generation was complete by June 20 and adults appeared by July 18 in the Racine-Kenosha area. This species was more of a statewide pest than in the past. STRAWBERRY LEAF ROLLER (Ancylis comptana fragariae) was moderate in Waupaca County but ranged light to moderate in Door County. ROOT KNOT NEMATODES were observed on strawberry roots in more plantings than in 1957. BLACK-HEADED FIREWORM (Rhopobota naevana) infestations were light in cranberry marshes. Approximately 10 percent of central and northwestern acreages were infested. Eggs began to hatch May 23 and 24. Pupation had started by June 20, and second-brood larvae hatched by July 11. Pupation of this brood was complete by August 15. Chemical treatment was carried out on a large portion of the infested acreage. Populations of a TIPWORM (Dasyneura vaccinii) were light. Eggs were observed by June 20, and maggots June 27. Limited acreage was treated. CRANBERRY FRUITWORM (Acrobasis vaccinii) infestations were light.

Forest, Ornamental and Shade Tree Insects: EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) pupation in Milwaukee County was approximately 55 percent complete by June 6 and 90 percent in Manitowoc County by June 27. In southeastern counties emergence began the week of June 13 and in Sheboygan County the week of June 20. SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) emerged in late May in Dane County. Emergence continued for a longer period due to cool weather and reached its peak in the latter half of June. There were 1,832 elm trees diagnosed as having Dutch elm disease. Green, Dane and Ozaukee Counties were added to the list of infested counties. TWO-SPOTTED SPIDER MITE (Tetranychus telarius) was numerous on many ornamental evergreens. High populations of SCALE insects infested ornamental, shade and fruit trees in southern areas and were the highest for the past decade. ROSE CHAFER (Macrodactylus subspinosus) adults appeared June 8 in Marquette County and were numerous in the light soil areas of the State. Other areas reported having high populations. A BEETLE (Strigoderma arboricola) was numerous in similar areas. MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) larvae were numerous in elm in various localities. ELM LACE BUG (Corythucha ulmi) populations were high on elm along the Mississippi River. Other hosts were hackberry, Sumac and black walnut. Only the early generation of a SAWFLY (Neodriprion virginianus complex) was noted in Buffalo County and caused slight damage to a jack pine plantation. LARCH SAWFLY (Pristiphora erichsonii) populations appeared to be increasing in the northeast area where severe defoliation was reported from all counties. Some stands containing

marked trees have been stripped of foliage for three consecutive years. Nearly all tamarack stands in northwestern counties sustained moderate to complete defoliation and heavy defoliation was reported in several central counties.

A few isolated areas sustained moderate FOREST TENT CATERPILLAR (Malacosoma disstria) defoliation in the northern part of the northwest section, while in eastern Rusk County, northern Taylor County, southern Ashland County and most of Price County, the majority of the aspen stands were completely defoliated. Severe defoliation of aspen occurred in western Vilas and Iron Counties, and an area of 25 sections was completely defoliated in Langlade County. Reports of the presence of larvae were received from as far east as Calumet County and as far south as Columbia County. Pupal parasitism was as high as 95 percent in several areas. JACK-PINE BUDWORM (Choristoneura pinus) populations were light in northwest and northeast areas. Early-instar larvae were high in some central jack pine stands, but survival was poor and defoliation was light or not evident. WHITE-PINE WEEVIL (Pissodes strobi) populations were noticeably higher in most of the northwest area. Attacks continued in Vilas, Oneida and Marinette Counties on white and jack pine plantings. Infestations of 15-20 percent on red pine were observed in Vilas County where some control work was done. Varying degrees of infestation were found in Jackson, Monroe, Waupaca and Waushara Counties. Heavy infestations of PINE ROOT COLLAR WEEVIL (Hylobius radicis) were reported in Scotch pine in Shawano and Oconto Counties with damage to Christmas tree plantings and, in some cases, to windbreaks. Weeviled red and Scotch pine were found in plantations and windbreaks in the Wisconsin River Valley around Lone Rock in Richland and Sauk Counties. Tree mortality continued to appear in central counties. Plantations in Burnett and Washburn Counties were again attacked. The weevil has become one of the most serious threats to jack pine plantations and ,to a lesser extent, Norway plantations in the northwest area. High nymphal counts of SARATOGA SPITTLEBUG (Aphrophora saratogensis) indicated a need for controls on 1,271 acres of plantations scattered over 6 counties. RED-HEADED PINE SAWFLY (Neodiprion lecontei) infestations heavy in Marinette, Oconto, Vilas and Langlade Counties. Some young red and jack pine plantings required spraying to prevent serious defoliation. Windbreak trees averaging 8 feet in height were completely defoliated in two growing seasons. This pest was general throughout the northwest area on scattered open grown trees and in young jack and red pine plantations. Scattered colonies occurred in central counties where they appeared to be reduced from 1957. SADDLED PROMINENT (Heterocampa guttivitta) larvae were extremely scarce in Door County, where populations were high two seasons ago. Moderate defoliation of maple occurred in one small area in central Bayfield County. There were scattered reports of varying loss by WHITE GRUBS (Phyllophaga spp.) on untreated seedlings in northeastern and southern counties. Infestations were severe in newly planted areas of Marathon and Shawano Counties, with moderate damage occurring in untreated fields. Severe losses occurred in a few new plantations in the Wisconsin River Valley. A WEBWORM (Tetralopha asperatella) and two LEAF ROLLERS (Sparganothis acerivorana and Acleris chalybeana) were collected in a survey to determine species that might be associated with maple blight. Preliminary surveys and early fall defoliation surveys showed these pests not to be in epidemic proportions in 1958.

Insects Affecting Man and Animals: AMERICAN DOG TICK (Dermacentor variabilis) was numerous in some localities, but less abundant than in 1957. The first, large emergence of a MIDGE (Tendipes plumosus) in Lake Winnebago, began the latter half of July, considerably later than in 1957. FLIES on cattle and in barns were not as numerous as in several past summers. They were not a problem until mid-July and in many instances only where sanitation of farm premises had been neglected. MOSQUITOES were not a problem in southern areas. In the Madison area, populations slowly increased during early August. High populations of Aedes sticticus and Aedes trivittatus occurred in Rusk County. The first MAYFLY in La Crosse appeared July 12. Various blacklight traps showed population increases along the Mississippi River at approximately the same time.

Large numbers of BROWN SPIDER BEETLE (Ptinus clavipes) infested a feed warehouse in Calumet County. CLOVER MITES were a problem in homes in many sections of the State.

Beneficial Insects: HONEY BEE (Apis mellifera) came through the winter with only about a 5 percent loss compared with a normal loss of about 20 percent. Unfavorable weather during May and June delayed the building up of colonies. The absence of heavy honey flow in May or June held swarming to a minimum. Unfavorable weather in the south delayed shipments of queens and packages as long as 4-6 weeks. By July 20, most beekeepers reported no surplus of honey, but strong colonies with every indication that feeding would be necessary in order to provide winter stores. August produced the heaviest honey flow known for so late in the season, resulting in the production of over 14 million pounds, to again rank Wisconsin fourth in the United States.

Blacklight Insect Trap Report: The use of the blacklight trap continued to expand during 1958 through the cooperation of Federal, State, private organizations and individuals. While the emphasis has been on lepidopterous insects, traps have been used for homopterous and dipterous species and show promise for some species of 8 other insect orders. Their present value lies in detecting the first emergence and peak flights as related to timing of treatments, biological studies, distribution and insect collections, but their use for other purposes in the future appears possible.

SUMMARY OF INSECT CONDITIONS - 1958

PENNSYLVANIA

Compiled by E. J. Udine

Highlights: The prolonged activity of ALFALFA WEEVIL which continued heavy feeding long after the first cutting. The migration of enormous numbers of EASTERN TENT CATERPILLAR caused considerable consternation. EUROPEAN PINE SAWFLY on conifers in the eastern part of the State was much more abundant than usual. First record of CARROT WEEVIL causing extensive damage to crops.

Cereal and Forage Insects: ALFALFA WEEVIL (Hypera postica) was found in only one additional county, Fayette, in 1958. This makes a total of 36 counties now infested. Cool, wet weather during the early spring delayed weevil development; consequently larvae continued to feed heavily after the first cutting thus preventing the new growth from developing. This delayed the second cutting and caused some mortality of alfalfa. Many growers found it necessary to apply a second treatment. PEA APHID (Macrosiphum pisi) on alfalfa in some areas was abundant enough to warrant treatment. In most other areas this species was not a problem. Activity of a MEADOW SPITTLEBUG (Philaenus sp.) was masked by the lush growth of hay crops but demonstrations on yields indicated an increase of about one-half ton of dry hay on sprayed plots. POTATO LEAFHOPPER (Empoasca fabae) did not appear as early as usual and did not increase rapidly. Control measures were not necessary in most areas. ARMYWORM (Pseudaletia unipuncta) outbreaks occurred in various areas of the State, some of which warranted control measures to stop further damage. EUROPEAN CORN BORER (Pyrausta nubilalis) surveys showed about same number of overwintering borers as in 1957, but favorable growing conditions reduced damage. CORN EARWORM (Heliothis zea) and EUROPEAN CORN BORER were light and very little damage occurred on commercial plantings of sweet corn.

Truck Crop Insects: POTATO LEAFHOPPER (Empoasca fabae) did not appear on potatoes as early as usual and did not increase rapidly. Very little damage resulted. GARDEN SYMPHYLID (Scutigerella immaculata) continued to cause considerable damage to potatoes in Lehigh, Northampton and Berks Counties. CARROT WEEVIL (Listronotus oregonensis) injured celery, parsley and parsnips in southeastern areas. In some instances, three-fourths of the parsley and parsnips were lost. PEA APHID (Macrosiphum pisi) was very abundant on peas in the northern sections and a few fields required controls. VARIEGATED CUTWORM (Peridroma margaritosa) did some damage to tomato fruit. Other garden insects were about normal or below normal.

Forest, Ornamental and Shade Tree Insects: A HICKORY APHID (Longistigma caryae) was numerous on oak. NORWAY-MAPLE APHID (Periphyllus lyropictus), PINE BARK APHID (Pineus strobi) and Hamamelistes spinosus were numerous on white birch. MIMOSA WEBWORM (Homadaula albizzae) was quite common in the southern part of the State on honeylocust and mimosa. EASTERN TENT CATERPILLAR (Malacosoma americanum) was heaviest in the western section and a great many eggs were laid last fall. FOREST TENT CATERPILLAR (Malacosoma disstria) defoliated groves of sugar maple in Somerset County. PALES WEEVIL (Hylobius pales) and Pissodes approximatus continue to be a problem in Christmas tree plantations. WHITE-PINE WEEVIL (Pissodes strobi) increased on Scotch pine. EUROPEAN PINE SAWFLY (Neodiprion sertifer), RED-HEADED PINE SAWFLY (N. lecontei) and RED-PINE SAWFLY (N. nanulus) occurred in numbers on both ornamentals and Christmas trees. PINE ENGRAVER (Ips pini) was again destructive to older trees in spotted infestations in plantations. PINE TORTOISE SCALE (Toumeyella numismaticum), and possibly Toumeyella pini, were very abundant in the fall and early spring but several species of COCCINELIDS practically wiped them out.

Household Insects: EASTERN TENT CATERPILLAR, CLOVER MITES and BOXELDER BUG (Lepticoris trivittatus) were abundant in some areas and in the southern section EUROPEAN EARWIG (Forficula auricularia) became a problem. BLACK FLIES plagued the northeastern resort areas for the second successive year, being most annoying from August 10 to September 10.

SOME OF THE MORE IMPORTANT INTRODUCED INSECTS REPORTED SINCE 1900

The recently increased interest in insect detection has given rise to such questions as "Where do our introduced pests come from?" and "Where are introduced pests first found in the country?" To answer these and similar questions, a list of some of the more important species has been compiled and adapted from the Survey and Detection files and records of cooperating agencies. It is believed that an abbreviated list dating from 1900 to the present will be adequate for this purpose.

Of the 100 species included here, there are many of outstanding importance. Some of these have been eradicated. The Mediterranean fruit fly, twice found established in Florida (1929 and 1956), has been eradicated in both instances. The 1934 citrus blackfly infestation in Key West, Florida, was eliminated. The Hall scale infestation in California has apparently been eradicated also. Other species in the list that are currently involved in cooperative State-Federal plant pest control programs are citrus blackfly, European chafer, Mexican fruit fly, white-fringed beetle, imported fire ant, khapra beetle, pink bollworm and Japanese beetle.

Many additional species of prime importance have been discovered since 1900. European corn borer, found in 1917 and now known in 39 states, caused $158,000,000 loss in 1957. Alfalfa weevil and spotted alfalfa aphid are outstanding pests of alfalfa. Sweetclover weevil and vetch bruchid are principal pests of their respective hosts. Rosy apple aphid, oriental fruit moth and European red mite are among the more important fruit insects, while pepper weevil, vegetable weevil, carrot rust fly and European earwig are in the same category from the truck crop standpoint. Some important forest and shade tree insects are in the list,including spruce aphid, balsam woolly aphid, introduced pine sawfly, European pine shoot moth, smaller European elm bark beetle and European pine sawfly.

It should be noted that only 14 percent of these new discoveries have been made in the last 20 years. This is especially significant when considered against the vast increase in traffic during this period. Such accomplishment undoubtedly reflects the increased vigilance that has been maintained at United States ports of entry in recent years.

The locations of the first reported record have been plotted, by State, on the following map. It will be noted that most discoveries have been made in the States of Washington, California, Texas, Florida, Massachusetts, New Jersey and New York. Within Massachusetts and New York a high percentage of the reports have been from Boston and New York City areas. (Prepared in Survey and Detection Operations, Plant Pest Control Division, April 1959).

SOME INTRODUCED INSECT PESTS REPORTED SINCE 1900

Some of the More Important Introduced Insects Reported Since 1900

Insect	Probable Origin	First U.S. Report	Date
Acantholyda erythrocephala (pine false webworm)	Europe	Pa.	1925
Adelphocoris lineolatus (alfalfa plant bug)	Europe	Iowa	1929
Aleurocanthus woglumi (citrus blackfly)	Mexico	Fla.* Texas	1934 1955
Amphimallon majalis (European chafer)	Europe	N. Y.	1940
Anastrepha ludens (Mexican fruit fly)	Mexico	Texas	1927
Anomala orientalis (oriental beetle)	P. I.	Conn.	1920
Anthonomus eugenii (pepper weevil)	Mexico	Texas	1903
Anthophila pariana (apple and thorn skeletonizer)	?	N. Y.	1917
Anuraphis helichrysi (an aphid)	Europe	West Coast	1920
Anuraphis roseus (rosy apple aphid)	Europe	Del.	1900
Anuraphis tulipae (tulip bulb aphid)	Europe	N. Y.	1908
Aphis abietina (spruce aphid)	England via Canada	West	1915
Archips conflictana (large aspen tortrix)	Canada	Maine	1931
Argyresthia conjugella (apple fruit moth)	Europe	Wash.	1907
Aspidiotus destructor (coconut scale)	Orient	Fla.	1921
Autoserica castanea (Asiatic garden beetle)	Orient	N. J.	1921
Brachyrhinus cribricollis (a weevil)	Europe	Calif.	1929
Brachyrhinus meridionalis (a weevil)	Europe	Calif.	1931
Bruchus brachialis (vetch bruchid)	Europe	N. J.	1931
Calomycterus setarius (a weevil)	Japan	N. Y.	1929
Ceratitis capitata* (Mediterranean fruit fly)	Europe	Fla.	1929 1956
Ceutorhynchus assimilis (cabbage seedpod weevil)	Europe	Wash.	1935
Ceutorhynchus erysimi (a crucifer weevil)	Europe	N. Y.	1927
Chermes piceae (balsam woolly aphid)	Europe	Maine	1908
Cnephasia longana (omnivorous leaf tier)	Europe	Oreg.	1929
Cnidocampa flavescens (oriental moth)	Orient	Mass.	1906

* Eradicated

Insect	Probable Origin	First U.S. Report	Date
Coccus pseudomagnoliarum (citricola scale)	Japan	Calif.	1909
Coccus viridis (green scale)	?	Fla.	1942
Cryptococcus fagi (beech scale)	Europe	Mass.	1929
Cyrtepistomus castaneus (Asiatic oak weevil)	Japan	N. J.	1933
Dendrothrips ornatus (a thrips)	Europe	N. Y.	1929
Dialeurodes chittendeni (rhododendron whitefly)	Asia	Pa.	1932
Diarthronomyia hypogaea (chrysanthemum gall midge)	Europe	Mich.	1915
Dichomeris marginella (juniper webworm)	Europe	Conn.	1909
Diprion similis (introduced pine sawfly)	Europe	Conn.	1914
Eumargarodes laingi (a ground pearl)	Australia	Fla.	1951
Eumerus tuberculatus (lesser bulb fly)	Europe	N. Y.	1906
Evergestis pallidata (purple-backed cabbageworm)	?	Wisc.	1915
Forficula auricularia (European earwig)	Europe	R. I.	1911
Furcaspis biformis (a scale)	Brazil	N. J.	1914
Gasterophilus inermis (a bot fly)	Europe	Ill.	1935
Gracilaria syringella (lilac leaf miner)	Europe	Wash.	1921
Graphognathus leucoloma fecundus (a white-fringed beetle)	South America	Fla.	1936
Grapholitha molesta (oriental fruit moth)	Japan	D. C.	1913
Haematopinus quadripertusus (cattle tail louse)	Africa	Fla.	1945
Hoplocampa testudinea (European apple sawfly)	Europe	N. Y.	1942
Hypera brunneipennis (Egyptian alfalfa weevil)	Egypt or Sicily	Ariz.	1939
Hypera meles (a clover weevil)	Europe	N. Y.	1907
Hypera postica (alfalfa weevil)	Europe	Utah	1904
Lampetia equestris (narcissus bulb fly)	Europe	Calif.	1914
Laspeyresia nigricana (pea moth)	Europe	Wisc.	1906
Lecanium cerasorum (calico scale)	China?	Calif.	1912
Lecanium coryli (a scale)	Europe via Brit. Col.	Wash.	1924
Lecanium excrescens (a scale)	China?	Calif.	1920
Lepidosaphes ficus (fig scale)	Medit. Region	Calif.	1904

Insect	Probable Origin	First U.S. Report	Date
Lepidosaphes pini (a scale)	China or Japan	Md.	1952
Listroderes costirostris obliquus (vegetable weevil)	Australia	Miss.	1922
Longitarsus waterhousei (a mint flea beetle)	Europe	Mich.	1922
Miccotrogus picirostris (clover seed weevil)	Europe	Wash.	1929
Monarthropalpus buxi (boxwood leaf miner)	Europe	R. I.	1910
Neodiprion sertifer (European pine sawfly)	Europe	N. J.	1925
Nilotaspis halli* (Hall scale)	Middle East	Calif.	1934
Odonaspis ruthae (Ruth scale)	?	Fla.	1923
Ornithonyssus bursa (tropical fowl mite)	South America	N. Y.	1911
Ornithonyssus bacoti (tropical rat mite)	?	Mo.	1916
Panaphis juglandis (a walnut aphid)	Europe	Oreg.	1928
Panonychus ulmi (European red mite)	Europe	Oreg.	1911
Pealius azaleae (azalea whitefly)	Asia via Europe	S. C.	1923
Pectinophora gossypiella (pink bollworm)	Egypt or India via Mexico	Texas	1917
Physokermes piceae (spruce bud scale)	Europe	Mass.	1909

* Eradicated

Insect	Probable Origin	First U.S. Report	Date
Plagiodera versicolora (imported willow leaf beetle)	Europe	N. Y.	1911
Platyedra vilella (cotton stem moth)	Eurasia	N. Y.	1952
Popillia japonica (Japanese beetle)	Japan	N. J.	1916
Pseudocneorhinus bifasciatus (a Japanese weevil)	Japan	Conn.	1923
Pseudococcus comstocki (Comstock mealybug)	Orient	D. C.	1914
Pseudococcus gahani (citrophilus mealybug)	?	Calif.	1913
Psila rosae (carrot rust fly)	Europe via Canada	N. Y.	1902
Pyrausta nubilalis (European corn borer)	Europe	Mass.	1917
Rhipicephalus sanguineus (brown dog tick)	Africa	Texas	1906
Rhizoecus falcifer (ground mealybug)	?	N. Y.	1937
Rhyacionia buoliana (European pine shoot moth)	Europe	N. Y.	1913
Saissetia nigra (a scale)	?	D. C.	1912
Scolytus multistriatus (smaller European elm bark beetle)	Europe	Mass.	1909
Selenothrips rubrocinctus (red-banded thrips)	?	Fla.	1908

Insect	Probable Origin	First U.S. Report	Date
Sitona cylindricollis (sweetclover weevil)	Europe	Vt.	1931
Sitona lineata (pea leaf weevil)	?	Wash.	1940
Sogata orizicola (rice delphacid)	British Guiana	Fla.	1958
Solenopotes capillatus (a sucking louse)	?	Tex.	1910
Solenopsis saevissima richteri (imported fire ant)	South America	Ala.	1930
Stilpnotia salicis (satin moth)	Europe and Asia	Mass.	1920
Supella supellectilium (brown-banded roach)	?	Fla.	1903

Addition:

Insect	Probable Origin	First U.S. Report	Date
Microtheca ochroloma (yellow-margined leaf beetle)	South America	Ala.	1947

Insect	Probable Origin	First U.S. Report	Date
Taeniothrips inconsequens (pear thrips)	Europe?	Calif.	1904
Taeniothrips simplex (gladiolus thrips)	?	Ohio	1929
Therioaphis maculata (spotted alfalfa aphid)	East Medit.	N. Mex.	1954
Toxotrypana curvicauda (papaya fruit fly)	West Indies	Fla.	1905
Trachyphloeus bifoveolatus (a weevil)	Europe	N. Y.	1917
Trogoderma granarium (khapra beetle)	Asia	Calif.	1953
Xenopsylla cheopis (oriental rat flea)	Orient	Calif.	1907

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